

WHAT IS CLAIMED IS:

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1. A device information acquisition method of acquiring device information in which a function of devices is written from the devices connected to a network
5 constituted by a single bus which is a local bus to which the devices are connected or a network formed by connecting, through bridges, a plurality of buses including the local bus and remote buses to which the devices are not connected, comprising:

10 the discrimination step of discriminating whether the network is constituted by a plurality of buses or a single bus;

the bus ID acquisition step of acquiring a bus ID assigned to each of the remote buses;

15 the information acquisition step of acquiring device information from all devices connected to the network; and

the information discarding step of, when at least one of the remote buses is disconnected from the network, discarding device information of devices connected to the
20 disconnected remote bus,

wherein if it is discriminated in the discrimination step that the network is constituted by a single bus, the information acquisition step is executed with respect to all devices connected to the local bus, and

25 if it is discriminated in the discrimination step

[illegible]

3. A method according to claim 1, wherein the
10 discrimination step comprises discriminating, if the value
of the bus ID acquired in the bus ID acquisition step is a
predetermined value, whether the network is constituted by
a single bus, and discriminating, if the value of the bus
ID is other than the predetermined value, that the network
15 is constituted by a plurality of buses.

the bus ID acquisition step comprises acquiring forwarding information from all bridges connected to the local bus.

25 5. A method according to claim 1, wherein
 at least one bus ID management node for managing bus

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ID usage information in which all bus IDs assigned to at least one bus constituting the network is connected to the network, and

the bus ID acquisition step comprises acquiring bus
5 IDs assigned to all the buses by acquiring the bus ID usage information from the bus ID management node.

6. A method according to claim 1, wherein
the information acquisition step comprises:

the identifier acquisition step of acquiring an
10 identifier assigned to each of the devices connected to the buses of the network; and

the individual device information acquisition step of
acquiring the device information from each device
identified by the identifier acquired in the identifier
15 acquisition step.

7. A method according to claim 6, wherein

at least one identifier management node for managing
the identifiers, acquired by performing the identifier
acquisition step with respect to the respective devices
20 connected to each bus, by writing the identifiers in
identifier usage information is connected to each of the
buses of the network, and

the individual device information acquisition step is
performed with respect to each of the devices identified
25 by the identifier written in the identifier usage

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information acquired from the identifier management node.

8. A method according to claim 6, wherein

at least one device information holding node for holding the device information acquired in the individual device information acquisition step is connected to each of the buses of the network by performing the identifier acquisition step and the individual device information step with respect to each of the devices connected to each bus, and

the device information is acquired from the device information holding node.

9. A method according to claim 1, wherein

the method further comprises the initialization notification request step of requesting the node connected to the remote bus to notify occurrence of bus initialization in each of the remote buses, and

the information acquisition step is performed again with respect to each of the devices connected to the remote bus upon reception of a notification to the initialization notification request step.

10. A method according to claim 1, wherein

at least counting node having a counter indicating the number of times of occurrence of bus initialization in the single bus or the plural buses of the network is connected to each bus, the method further comprises the

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the information acquisition step is performed again with respect to each of the devices connected to each of the remote buses when a value different from the previously acquired value is acquired in the acquisition step.

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10         the method further comprises:
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the forwarding information check step of checking
15 whether a bit updated from a first state value to a second
state value and a bit updated from the second state value
to the first state value exist in the forwarding
information when a notification to the update notification
request step is received,

when the bit updated from the first state value to the second state value is detected in the forwarding information check step, the information acquisition step is performed with respect to each device connected to a bus having a bus ID represented by the bit, and when the bit updated from the second state value to the first state

[illegible]

5 the method further comprises:

the forwarding information check step of checking
10 whether a bit updated from a first state value to a second
state value and a bit updated from the second state value
to the first state value exist in the forwarding
information acquired in the forwarding information
acquisition step, and

13. A method according to claim 5, wherein

25 the method further comprises the bus ID change check

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step of periodically acquiring the bus ID usage information and checking on the basis of the acquired bus ID usage information whether a newly used bus ID or a bus ID that has not been used exists, and

5 when existence of the newly used bus ID is detected in the bus ID change check step, the information acquisition step is performed with respect to each device connected to a bus identified by the bus ID, and when existence of a bus ID that has not been used is detected,
10 the information discarding step is performed with respect to each device connected to a bus identified by the bus ID.

14. A method according to claim 1, further comprising updating the acquired device information by periodically performing the discrimination step, the bus ID acquisition
15 step, and the information acquisition step.

20 15. A device controller which is a node connected to a network formed by connecting a plurality of buses to each other through a bridge, comprising acquisition execution means for executing the device information acquisition method defined in ~~any one of claims 1 to 14.~~ ^{Claim 1}

16. A bridge for forming a network by connecting a plurality of buses to which devices are connected, comprising transmission means for, upon reception of a read request for information held by the bridge,
25 transmitting the information to a request source in

executing the device information acquisition method
defined in ~~any one of claims 1 to 14.~~ *claim 1*

[illegible]